

ABSTRACT

Methods and apparatus for securing a cylinder liner to a pump module. A tension body is disposed about the cylinder liner and attached to the pump module. A locking body engages the cylinder liner and is threaded to the tension body. A hydraulic load cell is removably attached to the tension body and includes a hydraulic ram arranged to impart a compressive load to the cylinder liner and a tension load in the tension body. The locking body can be adjusted axially to contact the cylinder liner and maintain the applied loads, which act as a pre-load to keep the cylinder liner in contact with the pump module.